Meeting: 1005, Newark, Delaware, SS 7A, Special Session on Frontiers on Complex Fluid Flows: Analytic and Computational Methods

1005-76-164 **M C Sostarecz*** (sostarec@math.udel.edu), 536 Ewing Hall, University of Delaware, Newark, DE 19716, and **A Belmonte** (belmonte@math.psu.edu), 302 McAllister Bldg, The Pennsylvania State University, University Park, PA 16802. *Evolution Equation for Viscoelastic Filaments.* Preliminary report.

Using a slender body approximation, we derive an integro-differential evolution equation that governs the development of a viscoelastic filament. A stability analysis shows that there is a critical nondimensional parameter for which these filaments will be linearly stable at short time. (Received February 08, 2005)